

**ABSTRACT**

The present invention relates to a photomultiplier of a fine structure that realizes a high multiplier efficiency. The photomultiplier comprises an outer casing whose interior is maintained at vacuum, and, in the outer case, a photocathode that emits photoelectrons in response to incident light, an electron multiplier section that performs cascade multiplication of the photoelectrons emitted from the photocathode, and an anode for taking out secondary electrons, which are generated at the electron multiplier section, are arranged. In particular, groove portions for performing cascade multiplication of electrons from the photocathode are provided in the electron multiplier section, and on the respective surfaces of each pair of wall portions that define the groove portions are provided with one or more protrusions each having a secondary electron emitting surface formed on the surface thereof.